Aviation Investigation Final Report

Location:	Kekaha, Hawaii	**Accident Number:**	ANC22LA025
Date & Time:	March 20, 2022, 14:57 Local	**Registration:**	N98763
Aircraft:	Cessna 172P	**Aircraft Damage:**	Destroyed
Defining Event:	Controlled flight into terr/obj (CFIT)	**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Aerial observation		

Analysis

The airplane departed on a visual-flight-rules flight to conduct a routine hurricane/tsunami warning mission. The standard flight route was to fly inland, passing a radar dome before turning west toward the coast. The airplane was then to fly offshore, following the coastline around the island.

Automatic Dependent Surveillance–Broadcast (ADS–B) data showed the airplane never made the turn to the coast and it continued over land and up a ridgeline. The airplane impacted a near-vertical mountain side in a nose-up, wings-level attitude. Witnesses reported hearing the airplane, but they were unable to see it due to the poor visibility near the accident site.

Postaccident examination of the airplane revealed leading edge damage to both wings indicative of a controlled flight into terrain. An examination of the available wreckage did not reveal any anomalies that would have prevented normal operation of the flight controls. Although several engine components were not located at the accident site, witnesses reported hearing the engine operating up to the time of impact.

Toxicology testing of the pilot's blood detected the presence of gabapentin, which can produce impairing effect such as sleepiness, dizziness, and/or diminished coordination. However, if the pilot's judgment was impaired, the copilot could have mitigated his improper decision making. Thus, it is unlikely that gabapentin's effects on the pilot contributed to the accident.

Based on the level attitude of the airplane when it impacted the rising terrain, it is likely the pilot had control of the airplane and flew into terrain that was obscured by the poor visibility.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's improper decision to continue the visual-flight-rules flight into low visibility conditions, which resulted in controlled flight into terrain.

Findings

Personnel issues	Lack of action - Pilot
Personnel issues	Decision making/judgment - Pilot
Environmental issues	Low visibility - Decision related to condition

Factual Information

History of Flight

Enroute	Controlled flight into terr/obj (CFIT) (Defining event)

On March 20, 2022, about 1457 Hawaii-Aleutian standard time, a Cessna 172N airplane, N98763, was destroyed when it was involved in an accident about 13 miles north of Kekaha, Hawaii, on the island of Kauai. The two pilots were fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 aerial observation flight.

The accident airplane, owned and operated by the Civil Air Patrol, was conducting a routine hurricane/tsunami practice flight. Witnesses reported to the Kauai Police Department that just before the accident they saw an airplane flying low, and close to the mountain, in poor weather conditions, then hearing a loud crashing noise. A search and rescue helicopter, operated by the Kauai Fire Department, subsequently located the fragmented airplane wreckage in an area of steep mountainous terrain, and confirmed that there were no survivors.

The airplane was equipped with ADS–B, which provides aircraft tracking to determine its position via satellite navigation or other sensors and periodically broadcasts it, enabling it to be tracked. The information can be received by air traffic control ground stations as a replacement for secondary surveillance radar, as no interrogation signal is needed from the ground.

According to archived Federal Aviation Administration ADS-B data, after the airplane departed the Lihue Airport, it initially proceeded southwest, then it turned north as it neared the northwest side of the island. The standard flight route was to fly inland, passing the radar dome at Barking Sands PMRF before turning west toward the coast. Once over the water, they were to maintain about 1/2 mile off the coast, at 1,000 ft above ground level (agl), and fly around the island. The starting altitude was 1,500 ft agl. ADS-B data shows the airplane never made the turn and continued over land and up the ridgeline, until impacting the mountain at about 3,600 ft. The ADS-B data stops near where the wreckage was found.

Two witnesses at the Kalalau lookout, near the accident site, heard an aircraft flying towards them and then impacting the mountain. They were unable to see the aircraft due to poor weather conditions. One of the witnesses recalled that they could only see about 20 ft because of fog. A Blue Hawaiian helicopter was operating in the vicinity near the accident site. The pilot recalled the weather was getting worse on the Napali coast. He said the clouds were about 2,000 ft to 2,500 ft in the valley leading to the overlook. The pilot saw an airplane that was flying straight and level, about 500 ft above him, and watched it appear to go into the clouds while flying to the north.

Pilot Information

Certificate:	Airline transport; Commercial; Flight engineer; Flight instructor	**Age:**	77,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Unknown
Other Aircraft Rating(s):	None	**Restraint Used:**	Unknown
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	Yes
Medical Certification:	BasicMed With waivers/limitations	**Last FAA Medical Exam:**	November 28, 2018
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	November 22, 2020
Flight Time:			

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	76,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Unknown
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	Unknown
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	Yes
Medical Certification:	BasicMed With waivers/limitations	**Last FAA Medical Exam:**	April 27, 2018
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	November 21, 2020
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N98763
Model/Series:	172P	**Aircraft Category:**	Airplane
Year of Manufacture:	1985	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	17276344
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	October 15, 2021 Annual	**Certified Max Gross Wt.:**	2550 lbs
Time Since Last Inspection:	23 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	5463 Hrs at time of accident	**Engine Manufacturer:**	LYCOMING
ELT:	C126 installed	**Engine Model/Series:**	O-320 SERIES
Registered Owner:	CIVIL AIR PATROL INC	**Rated Power:**	180 Horsepower
Operator:	CIVIL AIR PATROL INC	**Operating Certificate(s) Held:**	None

The airplane was not equipped with an autopilot system.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	PHBK,12 ft msl	**Distance from Accident Site:**	7 Nautical Miles
Observation Time:	15:51 Local	**Direction from Accident Site:**	297°
Lowest Cloud Condition:		**Visibility**	10 miles
Lowest Ceiling:	Overcast / 4300 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	Unknown / Unknown
Wind Direction:	320°	**Turbulence Severity Forecast/Actual:**	Unknown / Unknown
Altimeter Setting:	29.98 inches Hg	**Temperature/Dew Point:**	25°C / 19°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Lihue , HI (LIH)	**Type of Flight Plan Filed:**	Company VFR
Destination:	Lihue , HI (LIH)	**Type of Clearance:**	VFR
Departure Time:	14:25 Local	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	2 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	Unknown
Ground Injuries:		**Aircraft Explosion:**	Unknown
Total Injuries:	2 Fatal	**Latitude, Longitude:**	22.071864,-159.72112

The airplane impacted a near-vertical mountain side in a nose-up, wings-level attitude. After impact, the airplane fell about 1,100 ft, scattering debris on the side of the mountain. During a postaccident examination, flight control continuity was established from the cockpit to all flight control surfaces. All primary flight control surfaces with their appropriate trim tabs and flaps were accounted for at the wreckage examination.

The engine exhibited impact damage and damage from the fall down the mountain, which caused most components to separate from the engine. Several engine components were not located during the investigation.

Drivetrain continuity was established from the propeller to the rear of the engine case. The propeller had impact damage to both blades. Both blades were curved aft and had rotational scoring.

Medical and Pathological Information

Toxicology testing of the pilot performed by the Federal Aviation Administration Forensic Sciences Laboratory identified gabapentin 6612 (ng/ml) in the liver and 8079 (ng/ml) in the muscle. Based on the gabapentin level in the pilot's liver, it is possible that his blood gabapentin level may have been in a range capable of producing impairing effects such as sleepiness, dizziness, and/or diminished coordination at the time of the accident. Gabapentin is used for seizure disorders, neuropathies, and restless leg syndrome (RLS). It has a high rate of impairing side-effects including dizziness, drowsiness, blurred vision, and sedation. Regular use for any reason is disqualifying.

This medication was not reported at the most recent medical exam.

Additional Information

In April 2003, the FAA published Advisory Circular 61-134, General Aviation Controlled Flight into Terrain Awareness. The circular stated in part:

Operating in marginal VFR [visual flight rules]/IMC conditions is more commonly known as scud running. According to National Transportation Safety Board (NTSB) and FAA data, one of the leading causes of GA accidents is continued VFR flight into IMC. As defined in 14 CFR part 91, ceiling, cloud, or visibility conditions less than that specified for VFR or Special VFR is IMC and IFR [instrument flight rules] applies. However, some pilots, including some with instrument ratings, continue to fly VFR in conditions less than that specified for VFR. The result is often a CFIT [controlled flight into terrain] accident when the pilot tries to continue flying or maneuvering beneath a lowering ceiling and hits an obstacle or terrain or impacts water. The accident may or may not be a result of a loss of control before the aircraft impacts the obstacle or surface. The importance of complete weather information, understanding the significance of the weather information, and being able to correlate the pilot's skills and training, aircraft capabilities, and operating environment with an accurate forecast cannot be emphasized enough.

The FAA defines a Controlled Flight into Terrain (CFIT) accident as one that "occurs when an airworthy aircraft is flown, under the control of a qualified pilot, into terrain … with inadequate awareness on the part of the pilot of the impending collision." In April 2003, the FAA published Advisory Circular (AC) 61-134, entitled " General Aviation Controlled Flight Into Terrain Awareness." The AC highlights the inherent risk that CFIT poses for general aviation (GA) pilots.

The AC defined “situational awareness” as the pilot's knowledge “of what is happening around the aircraft at all times in both the vertical and horizontal planes. This includes the ability to project the near-term status and position of the aircraft in relation to other aircraft, terrain, and other potential hazards.”

The AC stated that "in visual meteorological conditions, the pilot in command (PIC) is responsible for terrain and obstacle clearance (See and Avoid) …" and identified several CFIT risks, including:

- Loss of situational awareness

- Breakdown in good aeronautical decision making

- Failure to comply with appropriate regulations

- Failure to comply with minimum safe altitudes

Administrative Information

Investigator In Charge (IIC):	Ward, Mark
Additional Participating Persons:	Spencer T. Leonard; Federal Aviation Administration ; Honolulu , HI Ernest Hall; Textron Michael Nunemaker; Civil Air Patrol
Original Publish Date:	October 19, 2023
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=104805

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, "accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties … and are not conducted for the purpose of determining the rights or liabilities of any person" (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB's statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available here.